

10. An audio signal as recited in claim ⁹7, wherein said plurality of different magnifications include magnification designations of 1/4, 2, and 4.

REMARKS

The Office Action dated December 4, 2001 has been received and carefully noted. The preceding amendments and the following remarks are submitted as a full and complete response thereto. Claims 1 and 7 have been amended. Claims 9-10 have been added. No new matter has been added or new issues raised that require further consideration or search. Accordingly, Claims 1-10 are pending in this application and are submitted for consideration.

The Applicants' representative thanks the Examiner for conducting a very helpful personal interview on March 26, 2002.

Claims 1-8 were rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 5,734,731 to Marx (hereinafter, "Marx"). Generally, the Office Action recites the elements of each claim and points to Marx and asserts that Marx shows each and every element of the claims. Applicants submit that claims 1-10, as submitted, recite subject matter which is neither described nor suggested by Marx.

Claim 1, upon which claims 2-6 and 8-10 depend, recites an audio signal processing apparatus capable of changing the tempo of an input audio signal. The apparatus comprises a magnification designating means and means capable of automatically detecting beats per minute. The magnification designating means is capable of designating a plurality of different magnifications, wherein the different magnifications are 1/n or n, wherein n is an integer. The means capable of automatically

detecting beats per minute is capable of automatically detecting beats per minute of the input audio signal or a beat period of the input audio signal, changing the beats per minute or the beat period by computing the detected beats per minute or the detected beat period with a magnification designated by the magnification designating means, and changing the tempo of the input audio signal in accordance with the changed beats per minute or the changed beat period.

Claim 7 recites an audio signal processing apparatus which changes the tempo of an input audio signal. The apparatus comprises a magnification designating device and a device which automatically detects beats per minute. The magnification designating device designates a plurality of different magnifications, wherein the different magnifications are $1/n$ or n , wherein n is an integer. The device which automatically detects beats per minute, automatically detects beats per minute of the input audio signal or a beat period of the input audio signal, changes the beats per minute or the beat period by computing the detected beats per minute or the detected beat period with a magnification designated by the magnification designating device. The tempo of the input audio signal is changed in accordance with the changed beats per minute or the changed beat period.

As a result of the claimed configuration, a user of the claimed apparatus can most easily change the tempo of an input audio signal by selecting a magnification (e.g., 2 - which doubles the tempo) and the apparatus computes the new tempo by using the detected beats per minute or beat period with a magnification designated by the magnification designating means.

Marx is directed to an audio mixer for use with audio input devices which provide a number of audio effects and editing features. Marx describes a user interface 36 which presents an array of pitch, speed and tone controls 44 as well as standard functions such as fade, base, treble, etc., for precisely governing audio output. Light-emitting diodes or liquid crystal displays which can display information such as number of beats per minute. See column 6, lines 12-18. Once beats are detected and known by the processor 12, the processor 12 can automatically synchronize music defects to the next downbeat or the user can skip any given number of beats. See Marx at column 9, lines 34 to 53. The tempo is selected out of a range which encompasses most classes of popular dance music. In the preferred embodiment of Marx, the range is restricted to dance music having 81 to 160 bpm. This tempo can alternatively be selected for specific types of dance music such as swing, *merenge*, etc. Presumably, the selection is made by a user, even though it is not expressly stated. As was discussed in the Interview, Marx does not show or suggest that a magnification can be selected by the user, then the tempo may be completed from the magnification designated and the detected tempo of the input signal, as defined by the claimed invention.

In contrast, in the claimed invention, a user could very easily double the tempo of an input audio signal, which a user of the Marx system could not do. As described in the present Specification, devices such as that described by Marx which allows a user to increase or decrease the tempo of the audio input are known as a prior art method/system for adjusting tempo. Marx is similar to the prior art discussed in the Specification in that it describes that the tempo may be accelerated or decelerated but

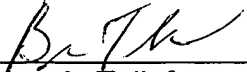
does not disclose or suggest a means for magnifying the detected bpm and then updated the tempo based on the magnified bpm. Thus, Applicants submit that Marx fails to show or suggest each and every element of claims 1 and 7, and 2-6 and 8-10 by their dependencies thereon. Accordingly, Applicants request that the rejection be withdrawn and claims 1-10 be allowed.

In view of the above remarks, the Applicants respectfully submit that each of Claims 1-10 recite subject matter which is neither disclosed nor suggested in the cited prior art. Applicants submit that this subject matter is more than sufficient to render the claimed invention unobvious to a person of ordinary skill in the art. Applicants therefore request that each of 1-10 be found allowable, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not timely filed, the Applicants respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 01-2300.

Respectfully submitted,



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MARKED UP COPY OF AMENDED CLAIMS

1. (Twice amended) An audio signal processing apparatus capable of changing the tempo of an input audio signal, said apparatus comprising:

magnification designating means capable of designating a plurality of different magnifications, said different magnifications being $1/n$ or n , wherein n is an integer;

means capable of automatically detecting beats per minute of the input audio signal or a beat period of the input audio signal, changing said beats per minute or said beat period [in accordance with] by computing the detected beats per minute or the detected beat period with a magnification designated by the magnification designating means, and changing the tempo of the input audio signal in accordance with the changed beats per minute or the changed beat period.

7. (Amended) An audio signal processing apparatus which changes the tempo of an input audio signal, said apparatus comprising:

a magnification designating device which designates a plurality of different magnifications, said different magnifications being $1/n$ or n , wherein n is an integer;

a device which automatically detects beats per minute of the input audio signal or a beat period of the input audio signal, changes said beats per minute or said beat period [in accordance with] by computing the detected beats per minute or the detected beat period with a magnification designated by the magnification designating device, and changes the tempo of the input audio signal in accordance with the changed beats per minute or the changed beat period.